

HYPERTONIC REDUCTION OF CHILLING INJURY

Abstract of the Disclosure

This invention relates generally to cryopreservation and a method for preventing injury caused by cooling and warming of tissue and for reducing the toxicity of vitrification solutions. The present method achieves reduction or elimination of injury by increasing the tonicity of the medium to greater than isotonic prior to cooling. The method was developed by attempting to simulate without freezing, the events that take place during freezing living cells and/or tissue. A further benefit of the method is that, since the cryopreservation medium is hypertonic, it can be diluted to a more extreme degree in one step once the system is rewarmed, without engendering the degree of cell swelling that would attend the same dilution factor when diluting an isotonic cryopreservation medium.